REMARKS

Reconsideration of this application is respectfully requested.

Claims 68-84 were previously pending and have been canceled above. New claims 85-110 have been added above. No claims have been amended. Accordingly, claims 85-110 are presented for further examination on the merits.

Applicants' undersigned attorney appreciates the telephone call that was received last week from Examiner David Guzo, Group Art Unit 1635, regarding the status of a response to the December 3, 2002 Office Action.

New Claims

As indicated above, new claims 85-110 have been added. Claim 85 is independent and is directed to a first vector comprising four elements. These elements are i) retroviral sequences; ii) retroviral packaging component or components; iii) non-retroviral viral vector sequences; and iv) nucleic acid sequences coding for an exogenous gene or exogenous nucleic acid sequence. Claim 85 further recites that "wherein when introduced into a packaging cell said first vector produces a second viral vector," that second viral vector comprising two elements: (a) said non-retroviral viral vector sequences; and (b) said exogenous gene or exogenous nucleic acid sequences. Finally, claim 85 concludes with the recitation "wherein said packaging cell provides one or more packaging components for said second viral vector." Claim 86 depends from claim 85 and recites "wherein said retroviral sequences (i) comprise one or more Long Terminal Repeat (LTR) sequences." In claim 87 that also depends from claim 85, the language recites "wherein said retroviral packaging component or components (ii) comprise

retroviral proteins." Depending from claim 87, claim 88 recites that "said retroviral proteins are part of a surface or envelope of said first vector."

Claims 89-94 all depend from claim 85. Claim 89 recites that "wherein said retroviral packaging component or components (ii) comprise at least two different retroviral proteins." Claim 90 recites "wherein said non-retroviral viral vector sequences (iii) comprise adeno-associated virus (AAV) sequences." In claim 91, the adeno-associated virus (AAV) sequences "comprise Inverted Terminal Repeat (ITR) sequences." Claim 92 defines the second viral vector as further comprising "one or more promoters, or one or more enhancer regions, or an integration segment or a terminator." Claim 93 also defines the second viral vector as further comprising "a combination of any or all of one or more promoters, one or more enhancer regions, an integration segment or a terminator." In claim 94, the exogenous gene or exogenous nucleic acid sequences of claim 85 are defined as coding for "a protein or an antisense sequence."

Claims 95-103 are directed to a packaging cell as recited in claim 85. In claim 95, the packaging cell is defined to comprise "a receptor for said first vector." Claim 96 recites that "said packaging cell lacks a receptor for said first vector." Claim 97 recites "wherein said packaging cell comprises a receptor for said second vector." In claim 98, the packaging cell is defined as lacking "a receptor for said second vector." Claim 99 recites that the packaging cell "comprises a receptor for said first vector and a receptor for said second vector." In claim 100, the packaging cell is defined as lacking "a receptor for said first vector and lacks a receptor for said second vector." Claim 101 defines the packaging cell as being "derived from NIH 3T3, U937, H9 or 293 cell lines." In claim 102, the packaging components for the second viral vector are "derived from sequences stably integrated into a chromosome or chromosomes of said packaging

cell." Claim 103 recites "wherein said packaging components for said second viral vector are derived from transient expression of non-integrated nucleic acid sequences."

Claims 104-110 are directed to a cell line. Claim 104 is independent and defines the cell line as comprising four elements. These include: i) retroviral sequences; ii) non-retroviral viral vector sequences; iii) nucleic acid sequences coding for an exogenous gene or exogenous nucleic acid sequence; and iv) packaging component or components for the non-retroviral viral vector sequences.

Claim 105 depends from claim 104 and it recites "wherein said retroviral sequences i) comprise all or a part of a retroviral LTR sequence." Claim 106 recites "wherein said non-retroviral viral vector sequences ii) comprise AAV sequences." In claim 107, the AAV sequences of claim 106 are defined to comprise ITR sequences. Claim 108 defines the second viral vector as further comprising "one or more promoters, or one or more enhancer regions, or an integration segment or a terminator." Claim 109 recites "wherein said second viral vector further comprises a combination of any or all of one or more promoters, one or more enhancer regions, an integration segment or a terminator." Claim 110 depends from claim 109 and it recites "wherein said exogenous gene or exogenous nucleic acid sequences code for a protein or an antisense sequence."

Applicants respectfully submit that the subject matter of claims 85-110 is fully supported by their original disclosure and does not represent the inclusion of new matter. Instead, claims 85-110 are believed to comprise subject matter to which Applicants are duly entitled to claim.

Moreover, the presentation of new claims 85-110 and the cancellation of former claims 68-84 is believed to conform with the new Revised Format Of

Amendments, signed January 31, 2003 and published in *Official Gazette* (February 25, 2003).

Entry of new claim 85-110 is respectfully requested.

The First Rejection Under 35 U.S.C. §102

Claims 68 and 70-74 stand rejected under 35 U.S.C. 102(b) as being anticipated by Salmons et al. In the December 3, 2002 Office Action (page 2), the Examiner stated:

> Applicants claim a first vector which can be a viral nucleic acid wherein said first vector is capable of producing a second vector (of a different chemical nature) in a packaging cell wherein the second vector is capable of expressing an exogenous gene in a target cell and said vector contains a promoter(s), terminator sequences, enhancers, etc.
>
> Salmons et al. (Human Gene Therapy, Vol. 4, 1993, pp. 129-141, see whole article, particularly Fig. 3 and pages 133-135) recites a first retroviral vector (i.e. a retroviral DNA provirus) wherein said vector (in the packaging cell) is capable of producing a second vector (of a different chemical nature, retroviral single stranded (partially) RNA genome) in a packaging cell line wherein the second vector is capable of expressing an exogenous gene in a target cell and said vector contains a promoter, terminator sequences, etc. Therefore, Salmons et al. teaches the claimed invention.

The anticipation rejection is respectfully traversed.

As indicated above, the claims are directed to a first vector comprising four elements. As set forth in claim 85, these elements are: i) retroviral sequences; ii) retroviral packaging component or components; iii) non-retroviral viral vector sequences; and iv) nucleic acid sequences coding for an exogenous gene or exogenous nucleic acid sequence. According to claim 85, when introduced into a packaging cell the first vector produces a second viral vector comprising: (a) said non-retroviral viral vector sequences; and (b) said exogenous gene or exogenous

nucleic acid sequences. The packaging cell provides one or more packaging components for the second viral vector.

Salmons et al. relates to a retrovirus that produces progeny retrovirus RNA vector genomes. In contrast to the cited document, the present invention is now directed to a retrovirus that produces a non-retroviral vector. As such, the cited Salmons publication is lacking in at least one material element set forth in the present claims.

Reconsideration and withdrawal of the anticipation rejection is respectfully requested.

The Second Rejection Under 35 U.S.C. §102

Claims 68, 70, 73 and 74 stand rejected under 35 U.S.C. §102(e) as being anticipated by Wilson et al. In the Office Action (page 3), the Examiner stated:

> Applicants and Wilson et al. (U.S. Patent 5,856,152, issued 115199, filed 10/28/94, see whole document, particularly Columns 8-9 (Section entitled "Regulatory Elements of the Hybrid Vector", Column 12 and Claims 1-2) recite a first viral vector (Wilson et al. recites a AA VIAd vector) which when introduced into a packaging cell produces a second vector (Wilson et al. recites a AA V vector produced from (rescued) from the AA VI Ad vector) wherein the packaging cell provides the AA V packaging components and wherein the second vector is structurally different (in size) from the first vector and can comprises a promoter, enhancer, tennination sequences, integration segment, etc. Wilson et al. therefore teaches the claimed invention.

The anticipation rejection is respectfully traversed.

As indicated above, the present invention is directed to a retrovirus that produces a non-retroviral vector. Wilson et al. does not anticipate the present invention because they describe a first viral vector that is adenovirus, a non-

retrovirus. Thus, unlike the present invention, a non-retroviral second vector is not produced in Wilson's disclosure from a retrovirus.

In view of this lack of identity of material elements between the cited Wilson publication and the presently claimed invention, Applicants respectfully request reconsideration and withdrawal of the second rejection under §102.

The Rejection Under 35 U.S.C. §112

Claims 68-84 stand rejected for indefiniteness under 35 U.S.C. §112, second paragraph. On pages 4 and 5 of the Office Action, the Examiner stated:

> Claims 68-84 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
>
> **[1]** Claim 68 (and dependent claims) are vague in the recitation of the phrase "...is produces a second vector...".
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> **[2]** Claims 71,72 and 74 are vague in the recitation of the phrase "...of said group." because there are multiple groups recited in claims 70 and 68 and it is unclear which group is being referred to.
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> **[3]** Claims 71,72 and 74 are vague in the recitation of the phrase "...the (i) viral nucleic acid or (emphasis added) the (iii) nucleic acid construct comprises a different member of said group." because it is unclear what type of comparison is being made here, i.e. each member is different from what standard?
>
> **[4]** Claim 74 is vague because it is unclear if applicants mean to recite vectors or nucleic acids comprising all of the recited components (promoters, enhancers, integration segment and terminator) together or in the alternative because applicants also recite in the claim "or a combination of any" of the aforementioned components.
>
> **[5]** Claim 73 is vague in that the claim can be read to recite "said nucleic acid size...comprises a segment" of nucleic acid. The term "nucleic acid size" is not a composition which can comprise anything, it is rather a description of the nucleic acid.
>
> **[6]** Claim 78 is vague in that it is unclear what applicants mean by a cell line which is "native" to a viral vector, since a viral vector

> can contain portions of different viruses, each with their own "native" cell lines. It is also unclear what applicants mean by the term "native", i.e. a cell which can support replication of the virus or a cell which can be infected by the virus but not produce progeny virions, etc.?

The indefiniteness rejection is respectfully traversed.

In order to ensure that every matter under rejection for indefiniteness has been addressed, Applicants' attorney has inserted bold bracketed numbers before each point. The remarks below are directed to those six bold and bracketed numbers inserted above.

[1] This issue has been obviated by presenting new claims without the unfortunate choice of grammar in the previous and now canceled claims.

[2] It is believed that this matter has also been obviated by presenting new claims without the language in question.

[3] The cancellation of claims 71, 72 and 74 is believed to have rendered this point moot.

[4] The language in new claims 92 and 93, coupled with the cancellation of claim 74 is believed to have addressed this issue.

[5] In view of the cancellation of claim 73 above, it is believed that this matter has been satisfactorily addressed.

[6] The "native" issue is believed to have been rendered moot and irrelevant by the cancellation of former claim 78.

In view of the presentation of new claims 85-110 and the cancellation of former claims 68-84, Applicants respectfully request reconsideration and withdrawal of the rejection under §112, thereby placing all of the new claims in condition for allowance. An early indication as to the allowability of new claims 85-110 is respectfully requested.

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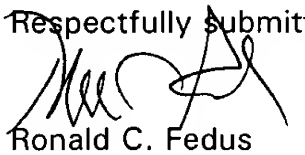
SUMMARY AND CONCLUSIONS

Claims 85-110 are presented for further examination, claims 68-84 having been added above.

The small entity fee for presenting new claims 85-110 is $54 based upon the presentation of six additional new claims above the previously paid twenty claims. The Patent and Trademark Office is authorized to charge the requisite $54 claim fee to Deposit Account No. 05-1135. No other fee or fees are believed due in connection with this paper. In the event that any other fee or fees are due, however, the Patent and Trademark Office is authorized to charge the amount of any such fee(s) to Deposit Account No. 05-1135, and to credit any overpayment thereto.

In view of the above discussion of the issues and amendments to the claims, Applicant respectfully submits that all of the instant claims are in allowable condition. Should it be deemed helpful or necessary, the Examiner is respectfully invited to telephone the undersigned at (212) 583-0100 to discuss the subject application.

Respectfully submitted,



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